Should all medical students be graduates first?

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YES

We must stop the headlong rush of pupils going straight from school into five year long medical courses. Bright teenagers are encouraged by teachers and parents to maximise their potential by aiming for the kudos and earning power of medicine. As consultants in their 20s, they will have little more breadth to their life experience than when they were studying during the week and spending their weekends meeting the unwritten requirements for school leavers to get into medical school—by working in care homes, hiking for the Duke of Edinburgh Gold Awards, and practising for grade VIII cello.

If we do what we have always done, we will always get a niche medical workforce. Diversity of the medical workforce has been hampered for too long by the "rhubarb forcing" techniques of secondary schools. Better grades at A levels are a predictor for medical student success, but our failure to nurture talent in deprived schools, coupled with the coaching power of private schools, has ensured that by restricting entry to medical school to those with better grades at A levels we are further disadvantaging some school leavers.[1]

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Graduate entry medicine can widen diversity

Graduate entry medicine in the United Kingdom was predicated on faster production of doctors and on broadening the field from which they are recruited.[2] Such courses should make efficient use of existing educational and healthcare capacity to produce more medical graduates and increase flexibility to respond to changing demand.[2] Graduate medical schools can be especially well placed to draw out the broader range of skills needed by future doctors.[3] Students who were underdeveloped at school can get another chance to read medicine after achieving good grades in a first degree.[4]

American doctors progress from high school through university to medical school. Australian graduate entry education was directed towards achieving diversity and moving away from "a narrow secondary education with a bias towards quantitative subjects."[5] In countries where the graduate entry degree is entirely self funded, medicine enables students to do a self fulfilling first degree in arts or sciences and then a vocational degree with sufficient earning potential to pay back debt after graduation. But graduate entry degrees can only deliver workforce diversity if selection strategies support this aim.[6]

Around 10% of UK medical school places are on graduate entry courses. Such courses can undoubtedly deliver the education in four years and enable intelligent graduates to move from science or arts learning at university to the level of competence needed for foundation year work in medicine.

Attributes associated with such courses include maturity,[6] which is related to ability to handle responsibility,[7 8] and benefits accruing from curriculum design[9]—graduate entry medicine has been an incubator for curriculum development.[10] Other attributes relate to previous university studies.[11] Graduates should be at an advantage, as experience helps learners to deal with abstraction. Graduate schemes can concentrate on developing professional study skills rather than acquiring tertiary study skills.[7]

Peter McCrorie, a pioneer of graduate entry teaching, pointed out that for graduate entry medicine to make a difference, courses must be designed specifically for graduates, and "build upon their strengths, motivation, and prior learning."[7] A student explained, "Graduates have already learnt how to study and how to ration the other temptations of student life in order to keep up with their studies. This makes them better able to handle a self-directed learning approach."[12]

Cost benefits in meeting NHS workforce needs

Cost comparisons are difficult because of the present system of bursaries and charges for second degrees, and such factors as the need to repeat a year on a fast track course or the inclusion of intercalated degrees in conventional courses. A study from South Africa compared data on conventional course costs with projections for a graduate entry course and found similar total years of study, student costs, and costs to society for a four year graduate entry course and a six year undergraduate programme.[13] The problem of fast track students who end up needing extra time is contentious, and should be determined on the basis of academic progress.

There are not sufficient published data on attrition rates across medical courses to complete the cost comparison, but graduates are probably more likely to complete the course. The age range of entrants to St George's Medical School was 21-44 years in 2003. Age at entry is one factor relevant to length of career service in the National Health Service. The prediction that graduates would make a more informed career choice[12] because of their wider personal experience at university and elsewhere remains unproved. US data indicate that older graduates practice more readily in underserved areas and are more likely to work in primary care. Data from Australia also suggest that graduate entry schemes better prepare doctors for the workplace in some important aspects of patient care and team working, as well as in self directed learning.[14]

Although there is little support among UK medical education policymakers for the two cycle Bologna model for medical programmes,[15] a system of graduate only programmes would enable the reclassification of such programmes at masters level.

A change to a single system of graduate entry medical schools in the UK should attract mature learners with high levels of motivation, independence of outlook, and orientation towards hard work. Graduate entrants have the additional maturity and strengthened interpersonal skills necessary to provide the diverse multiskilled workforce needed for the future.

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Most people in the UK enter medical college straight from school. **Ed Peile** argues that changing to a single system of graduate entry medical schools would provide the diverse multiskilled workforce needed for the future, but **Charles George** thinks that there is insufficient evidence to make this a criterion of entry

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NO Traditionally, admission to a UK medical school has been directly after leaving school or one year later. In a survey carried out for the Council of Heads of Medical Schools (CHMS) in 1998,[1] only 15.6% were mature (21 and over), and the proportion of these 2955 students who were graduates was not given. Since the late 1990s, the numbers of students entering existing medical schools have expanded and four more schools have been created in England. The demography of people applying for a place has changed, and in the period 2003-2005 22.4% of entrants were mature.[2]

We do not need to modify the current system by restricting entry to graduates. It would be discriminatory to school leavers and to mature non-graduates to limit medical training to people who already have a degree in the absence of any convincing evidence of benefit. It would also cost more to the taxpayer for students to do both a first degree and a postgraduate medical degree.

Mature students and graduates

My experience of mature medical students and graduates at entry derives from more than 25 years as a clinical academic at the University of Southampton. There, from the first entry of students in 1971, we encouraged applications from "mature" people, taking up to 15%.[3] Without exception, they were committed to becoming doctors, and had to be in view of the financial and other sacrifices they had to make. Their "wastage rates" were low, with almost all completing the course. In addition, they brought the diversity sought by Professor Peile and the medical schools to the student body—one of the guiding principles advanced by CHMS.[4] But it was chiefly their experience of "life in the real world" that benefited the university and subsequently their patients. Importantly, these attributes applied equally to graduate entrants and those without degrees. Consequently, in my view, it would be wrong to discriminate between these two categories of mature students and to do so would limit the diversity sought by CHMS.

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After publication of the first edition of *Tomorrow's Doctors*,[5] the education committee of the General Medical Council made informal visits to medical schools in the late 1990s.[6] The visitors talked with and listened to several hundred medical students and preregistration house officers (foundation year one doctors). These articulate young people pointed out that it is illegal to discriminate on the grounds of age and that by 18 they could buy alcohol, smoke, drive a car, enlist in the armed services, and vote. They thought that graduate only entry schemes would discriminate against school leavers and non-graduate mature students in the absence of convincing evidence for such schemes.

School leavers are intelligent, multitalented, committed, and come with excellent study skills and there is no evidence that graduate entrants make better doctors. The evidence here derives mainly from cohort studies performed at individual medical schools. Examples include Nottingham, United Kingdom, where James and Chilvers followed the students entering between 1970 and 1995.[7] Graduate entrants were more successful in the first three years of the course, with more obtaining a first class Bachelor of Medical Science degree. However, graduate entrants in the period 1986-1990 were less successful in the final BMBS (Bachelor of Medicine, Bachelor of Surgery) examinations. These results suggest that the graduate entrants were less competent as clinicians than their school leaver counterparts. Although the numbers are not large, these findings are consistent with a study of interns in New South Wales.[8] However, a study from New South Wales found no significant differences between school leavers and graduate entrants in terms of academic performance (measured by the award of honours) or in career positions obtained after qualifying.[9]

Academic medicine

Worldwide, there are concerns about recruitment into academic medicine, and intuitively recruiting science graduates into medicine ought to be beneficial. However, the Newcastle experience failed to produce evidence in favour of this idea. It contrasts with the well documented benefits of an intercalated BSc,[10 11] which was extremely important to my career as a clinical academic. Each year, about 30 of the most able students can proceed to an MB PhD programme, which contrasts with more than 1000 in the United States, where such programmes have been running successfully for several decades.[12]

While selection for a career in medicine is problematic, CHMS (now the Medical Schools Council) and the universities have tried hard to make entrants more representative of all sections of society. Although the selection of school leavers relies heavily on academic performance at A level, follow-up of those entering the former Westminster Medical School between 1975 and 1982 showed that A level grades had long term predictive validity for both undergraduate and postgraduate careers.[13]

In conclusion, although graduate entrants increase the diversity of our future doctors, there is insufficient evidence to make this a universal criterion for entry. Finally, we should not forget that graduate and mature entrants are subject to additional stresses, such as balancing commitments and lack of leisure time. They also face extra financial pressures,[9] when in 2006 the median debt of all people qualifying in medicine was £22 500 (€33 000; $46 000).

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All references are in the version on bmj.com